Origination Form

Specifications

Name:	Adrian Steele	**Standard Specification Section:**	962
Email:	adrian.steele@dot.state.fl.us	**Special Provision:**	
Date:	2025-05-12T14:46:00Z	**Associated Specs:**	None

Summary:

We have removed all inconsistencies, updated the tables to reflect the corrected ASTM standards for the hardware. We have also corrected the coating table for hardware.

Justification:

There are some sections where the information is not accurate. There are table references that do not exist. These needed to be removed. We also reviewed and updated the tables and standards for the allowed hardware. There were many inconsistencies that needed to be removed or updated.

Do the changes affect other types of specifications?

Neither

List Specifications Affected:

Other Affected Documents/Offices	Contacted	Yes/No
Other Standard Plans		No
Florida Design Manual		No
Structures Manual		No
Basis of Estimates Manual		No
Approved Product List		No
Construction Office		No
Maintenance Office		No
Materials Manual		No
Traffic Engineering Manual		No

Are changes in line with promoting and making progress on improving safety, enhancing mobility, inspiring innovation, and fostering talent; explain how?

These updates correct the hardware tables, fix the allowed coating methods for hardware, ultimately improving the efficiency and safety of structural steel construction.

What financial impact does the change have; project costs, pay item structure, or consultant fees?

N/A

What impact does the change have on production or construction schedules?

These updates clarify the compatibility of certain bolted assembly parts with each other. This will enable the contractors to procure these materials with better clarity, improving the schedules of construction.

How does this change improve efficiency or quality?

Updated tables remove inconsistencies in the tables, this will eliminate the risk of incorrect installation of connection assemblies.

Which FDOT offices does the change impact?

State Structures Office, State Materials office.

What is the impact to districts with this change?

This update does not directly impact the districts.

Does the change shift risk and to who?

This update eliminates certain risks to the department, since it is eliminating some of the incorrect language.

Provide summary and resolution of any outstanding comments from the districts or industry.

Comments and Responses are available on the Track the Status of Revisions hyperlink located on the Specifications landing page: https://www.fdot.gov/programmanagement/Specs.shtm

What is the communication plan?

Through the established specification revision process (e.g., Internal and Industry Review)

What is the schedule for implementation?

The Standard Specifications eBook and Workbook are effective July 1st every year.

STRUCTURAL STEEL AND MISCELLANEOUS METAL ITEMS (OTHER THAN ALUMINUM)
(REV 6-18-25)

962-1 General.

This Section covers the material and fabrication requirements for structural steel and miscellaneous metal components. All steel must be melted and manufactured in the United States and meet Section 6-5.2~~. All overhead cantilevers, monotubes, trusses and gantries, and bridge components (including steel castings, steel forgings, and bearing material) supplied under this Specification shall be from producers currently on the Department's Production Facility Listing. Producers seeking inclusion on the Department's Production Facility Listing must meet the requirements of Section 105~~. Provide certifications that meet the applicable section and 962-12.

962-2 Structural Steel.

962-2.1 Structural Steel Materials: Provide structural steel ~~for bolted or welded construction~~ that meets the requirements of Table 962-~~1.~~1. See ~~and~~ Table 962-~~1.~~2 when impact testing is specified. Grade HPS 70W shall not be substituted for Grade HPS 50W. Weathering steel shall not be substituted for non-weathering steel without Engineer approval.

Do not apply heat treatment unless approved by the Engineer. When galvanizing is specified, provide galvanizing in accordance with 962-11.1.

Table 962-1
Structural Steel Materials

Product	ASTM	Grade/Style	Reportable Properties	Supplementary Requirements
Structural Steel~~Plate~~	A709	36	Composition, Yield ~~Strength~~, Tensile ~~Strength~~, Elongation, Killed	None
		50		
		50S		Carbon Equivalency
		50CR		Heat-treating temperatures
		50W	Composition, Yield ~~Strength~~, Tensile ~~Strength~~, Elongation, Killed, Fine Grain	Corrosion Resistance Index
		HPS 50W		Corrosion Resistance Index, Heat Treatment Temperatures
		HPS 70W		

962-2.2 Impact Requirements: Structural steel subject to tensile stress for primary~~main load-carrying~~ members shall meet the impact requirements listed in Table 962-2. Mill test reports shall identify average impact test values. Provide certifications that meet this section and 962-12.

~~For non-fracture and fracture critical tension components, provide structural steel in accordance with ASTM A709.~~

Table 962-2 Requirements for Impact Testing Structural Steel					
Product	ASTM	Grade	Zone	Minimum Average Energy (ft*lbf)	
				Members Not Requiring FC Practice~~Non-Fracture Critical~~	Members Requiring FC Practice~~Fracture Critical~~
Structural Steel	A709	36	1	15 at 70°F	25 at 70°F
		50 50W 50S		15 at 70°F (≤ 2.0"t) 20 at 70°F (> 2.0"t)	25 at 70°F (≤ 2.0"t) 30 at 70°F (> 2.0"t)
		50CR		15 at 70°F	25 at 70°oF
		HPS 50W		20 at 10°F (≤ 2.0"t) 25 at 50°F (> 2.0"t)	30 at 10°F (≤ 2.0"t) 35 at 50°F (> 2.0"t)
		HPS 70W		25 at -10°F	35 at -10°F
Structural Steel Tubing	A500	B, C, D		15 at 70°F	25 at 70°F
	A501	A, B			
	A847	Round, Square, Rectangle, Special			
Notes: 1. If yield ≥15 ksi above specified grade, test temperature must drop 15°F for each 10 ksi above grade. 2. FC – Fracture Control					

962-3 Steel Castings.

Provide carbon steel and corrosion resistant castings in accordance with this section and Table 962-3.

962-3.1 Carbon Steel Castings: Perform heat treatments by annealing, normalizing, normalizing and tempering, or quenching and tempering after castings have been allowed to cool from the pouring temperature to below the transformation temperature range as regulated by the use of pyrometers. Class 1 castings shall be used if post-weld heat treatment is specified in the contract documents.

962-3.2 Corrosion Resistant Steel Castings:
Perform heat treatments by air cooling and tempering; or annealing as defined in ASTM A743 Table 1.

Table 962-3 Requirements for Steel Castings					
Product	Standard	Grade	Class	Reportable Properties	Supplementary Requirements
Carbon Steel	ASTM A27	65-35, 70-36	1, 2	Composition, Tensile, Class	None
	ASTM A743	CA 15M	All		S11, S12

Corrosion Resistant Steel	AASHTO M 163			Composition, Heat Treatment	

962-4 Steel Forgings.

Provide carbon steel and alloy steel forgings from which pins, rollers, trunnions, shafts, gears, or other forged parts are fabricated in accordance with this section and Table 962-4.

The manufacturer may elect to choose from any of the class specific heat treatments identified in ~~the~~ Table 962-4, provided that the controlling cross-sectional thickness meets mechanical property test requirements. Retreatment by re-austenitizing a lot is allowed up to three times when the mechanical properties have not been met. Re-testing of the mechanical properties is required on any lot subject to retreatment.

Table 962-4
Requirements for Steel Forgings

Product	Standard	Class	Reportable Properties	Supplementary Requirements
Steel Forgings	ASTM A668	C, D, F, G	Composition, Tensile, Yield, Elongation, Hardness	S7
	AASHTO M 102			

962-5 Iron Castings.

Provide iron castings that conform to the requirements of this section and Table 962-5. When galvanizing is specified in the contract, galvanize in accordance with 962-11.

962-5.1 Gray Iron Castings: Provide gray iron castings that conform to the requirements of this section and Table 962-4. AASHTO HL-93 load testing may be substituted for tensile testing when specified in the contract documents. When Alternative G castings are specified, provide a composition that precludes the possibility of embrittlement during the normal thermal cycle of hot-dip galvanizing.

962-5.2 Ductile Iron Castings: Perform full ferritizing anneal to remove carbides or stabilized pearlite. AASHTO HL-93 load testing may be substituted for tensile testing when specified in the contract documents.

962-5.3 Malleable Iron Castings: Perform heat treatments in the same production furnace and in the same cycles as the castings they represent. Produce a microstructure consisting of temper carbon nodules distributed through a ferritic matrix and free of excessive pearlite, massive carbides, and primary graphite. When critical sections of the production castings differ appreciably from that of the central portion, the time cycle for tempering may be altered from that of the production lot in order to obtain similar microstructures, or hardness, or both.

When Alternative G castings are specified, provide a composition that precludes the possibility of embrittlement during the normal thermal cycle of hot-dip galvanizing, or provide heat treatment that immunizes the casting against embrittlement during the normal thermal cycle of hot-dip galvanizing.

Table 962-5 Requirements for Iron Castings				
Product	Standard	Grade/Class	Reportable Properties	Supplementary Requirements
Gray Iron Traffic Service	AASHTO M 105 & AASHTO M 306	35B	Tensile*	None
Gray Iron Machinery	AASHTO M 105	30	Tensile	None
Ductile Iron	ASTM A536	60-40-18	Tensile*, Yield, Elongation, Heat Treatment	Additional Tensile test for castings > 1,000 lbs.
Malleable Iron	ASTM A47	30518 [24118]	Tensile, Yield, Elongation, Heat Treatment	None
*AASHTO HL-93 may be substituted for tensile testing of vaned gratings, when specified in the contract.				

962-6 Bolts, Nuts, ~~and~~ Washers, and Shims Not Designated as High-Strength.

Provide bolts, nuts, and washers not designated as high strength meeting the requirements listed in this Section ~~and Table 962-6~~. Use the appropriate nuts and washers as stated by this section and the corresponding ASTM bolt standard. When galvanizing is specified in the contract documents, provide galvanizing in accordance with 962-11.3.1.

Use double nuts, when ordinary rough or machine bolts are specified in the Contract Documents. Bolted assemblies shall be made of similar coating composition. ~~When weathering material is used, provide the entire assembly in weathering steel. Bolts meeting the requirements of ASTM A193, washers meeting the requirements of ASTM F844 and nuts meeting the requirements of ASTM A194 or AASHTO M292 may be used with the Engineer's approval.~~

Table 962-6 Bolts, Nuts, and Washers Not Designated as High-Strength				
Product	Standard	Grade	Style	Reportable Properties
Bolts	ASTM A307	A, B	Heavy Hex, Threaded Rod	Size, Composition, Hardness, Tensile
	ASTM A449	1, 3	Hex, Threaded Stud	Size, Composition, Tensile, Proof Load, Hardness
	ASTM F593	Group 2 316 or 316L	Condition A CW1 or SH1	Alloy, Group, Condition
	ASTM A193*	B7, B16	Any	Size, Composition, Hardness, Heat

Table 962-6 Bolts, Nuts, and Washers Not Designated as High-Strength				
Product	Standard	Grade	Style	Reportable Properties
				Treatment, Macroetch results
Nuts	ASTM A563	A	Hex	Size, Composition, Proof Load, Hardness
		C, C3, DH, DH3	Heavy Hex	
	ASTM F594	Group 2 316 or 316L	CW	Alloy, Group, Condition
	ASTM A194*	2, 2H	Hex, Heavy Hex	Composition, Hardness, Proof Load
	~~AASHTO M 292*~~	~~2, 2H~~	~~Hex, Heavy Hex~~	~~Size, Composition, Hardness, Heat Treatment, Macroetch results~~
Washers	ASTM F436	1, 3	Circular, Beveled, Clipped, Extra Thick	Size, Hardness
	N/A	316 or 316L	Any	Alloy, Size
	ASTM F844*	Plain	Round, Miscellaneous	Size
	ASTM A36	All	N/A	Killed, Thickness
Shims	ASTM A1011	Any	Any	None
	ASTM A109	Any	Any	None
	ASTM B36	Brass	Any	None
*Requires Engineer approval.				

962-7 High-Strength Bolts, Nuts, Washers and Direct-Tension-Indicator (DTI) Devices.

Provide high-strength bolts, nuts, washers and DTI devices in accordance with this Section ~~and Table 962-7~~. ~~High-strength bolts shall have identifying marks meeting ASTM F3125 Table 2 and ASTM A563. High-strength bolted assemblies shall be made of similar coating composition.~~ Use the appropriate nuts and washers as stated by this section and the corresponding ASTM bolt standard. Nuts shall have identifying marks meeting ASTM A563. When galvanizing is specified in the contract documents, provide galvanizing in accordance with 962-11.3.2. ~~Bolts meeting the requirements of ASTM F3125 Grade A490, washers meeting the requirements of ASTM F844, and nuts meeting the requirements of ASTM A194 or AASHTO M 292 may be used with the Engineer's approval.~~

Table 962-7 Requirements for High-Strength Steel Fastener Assemblies					
Products	Standard	Grade	Type/ Style	Reportable Properties	Supplementary Requirements
Bolts	ASTM F3125	A325	1, 3 Heavy Hex	Size, Composition, Tensile, Proof Load, Hardness,	None
		~~A490*~~		~~Size, Composition, Tensile, Proof Load, Hardness, Magnetic Particle, Carburization/ Decarburization~~	
	ASTM A354*~~193~~	BC~~7, B16~~	Heavy Hex~~Any~~	Size, Composition, Hardness, Heat Treatment, Macroetch results	~~S5~~None
Nuts	ASTM A563	DH, DH3	Heavy Hex	Size, Composition, Proof Load, Hardness	S1, S2 min. 89 HRB or 180 HB
	ASTM A194*	2H	Heavy Hex	Size, Composition, Hardness	Max HRC32
	~~AASHTO M 292*~~	~~2H~~	~~Heavy Hex~~	~~Size, Composition, Hardness, Heat Treatment, Macroetch results~~	~~Max HRC32~~
Washers	F436	Circular, Beveled, Clipped, Extra Thick	1, 3	Size, Hardness	None
	F844~~*~~	Round, Miscellaneous	Plain	Size	None
	ASTM A709	36, 50	Any	Yield, Tensile, Elongation, Killed	None
	ASTM A36	36	Any	Yield, Tensile, Elongation, Killed	None
DTI Devices	F959	A325	1	Size, Composition, Compression Load, Hardness	Only use with ASTM F436 washers~~None~~
			3	Size, Composition, Compression Load, Hardness, Corrosion Resistance Index	

*Requires Engineer ~~A~~approval.

962-8 Anchor Rods and Bridge Bearing Materials.

962-8.1 Bearing and Masonry Plate: Meet the requirements of Table 962-8. Masonry plates and bearings shall be welded in accordance with AASHTO/AWS D1.5 Bridge Welding Code. When galvanizing is specified meet the requirements of 962-11.1.

Table 962-8
Requirements for Bearings and Masonry Plate

Product	ASTM	Grade	Style	Reportable Properties	Supplementary Requirements
Plate	A709	50W	All	Yield, Tensile, Elongation, Killed, Fine Grain	Corrosion Resistance Index
Laminates	A240	316	Gage 16	Yield, Tensile, Elongation, Hardness	None
	A1011	36	HSLAS, Class 1	Designation, Style	None
	A36	All	All	Yield, Tensile, Elongation, Killed	None

962-8.2 Anchor Rods and Bearing Hardware: Provide anchor rods and other bearing hardware in accordance with this section and Table 962-9. All fastening components shall be made of similar composition. When galvanizing is specified in the contract documents, provide galvanizing in accordance with Section 962-11.3.1. Anchor rods meeting the requirements of ASTM A307, washers meeting the requirements of ASTM F844, and nuts meeting the requirements of ASTM A194 may be used with the Engineer's approval.

Table 962-9
Requirements for Anchor Rods and Bearing Hardware

Product	ASTM	Grade	Style	Reportable Properties	Supplementary Requirements
Bolts	F1554	36	Threaded Rod	Lot, Size, Tensile	None
		55		Lot, Size, Tensile, Carbon Equivalency	S1
		105		Lot, Size, Tensile, Carbon Equivalency	S3
	A307*	A, B	Threaded Rod	Size, Composition, Hardness, Tensile	S1
Nuts	A563	DH	Heavy Hex	Size, Composition, Proof Load, Hardness	None
	A194*	2H	Heavy Hex	Size, Composition, Hardness	None
Washers	F436	1, 3	Circular, Beveled,	Size, Hardness	None

Table 962-9 Requirements for Anchor Rods and Bearing Hardware					
Product	ASTM	Grade	Style	Reportable Properties	Supplementary Requirements
			Clipped, Extra Thick		
	F844*	Plain	Round, Miscellaneous	Size	None
Plate	A36	All	All	Yield, Tensile, Elongation, Killed	None
Shim	A653	All	Min. G30	Grade	None
	A1008 A36	All	A153, F2329	None	None
*Requires Engineers ~~A~~approval.					

962-9 ~~Miscellaneous Structures~~Overhead Sign Structures.

Provide overhead sign materials in accordance with this section Table 962-2, and Table 962-10. When galvanizing is specified, meet the requirements of 962-11.1. Produce welds using electrodes selected from the filler metals for matching strength tables, in accordance with AWS D1.1 Structural Welding Code.

Table 962-10 Requirements for ~~Miscellaneous Structures~~Overhead Sign Structures					
Product	Standard	Grade	Type/ Style	Reportable Properties	Supplementary Requirements
~~Overhead Sign~~ Upright Pipe	API 5L	X42R, X42N, X42M, X46N, X46M, X52N, X52M, X56N, X56M, X60N, X60M, X65M, X70M	PSL2	Killed, Fine Grain, Tensile, CVN Test	~~Processing Methods R & Q not allowed~~N/A
	A500	B, C	Round Structural	Composition, Yield, Tensile, Elongation	UT Seam Weld, (per API 5L) CVN Test per 962-2
~~Overhead Sign~~ Chord	~~API 5L~~	~~X42N, X42M, X52N, X52M~~	~~PSL2~~	~~Killed, Fine Grain, Tensile, CVN Test~~	~~Processing Methods R & Q not allowed~~
	A500	B, C	Round Structural	Composition, Yield, Tensile, Elongation	~~None~~N/A
Plate, Angles & Handhole Frame	A709	~~36,~~ 50	Plates & Shapes	Composition, Yield, Tensile, Elongation	~~None~~N/A
	A36	36			~~None~~N/A
Poles~~Tapered Tube~~	A1011	50, 55, 60, 65	Any	Designation, Grade	~~None~~N/A
	A572	50, 55, 60, 65	1, 2, 3, 5	Composition, Tensile,	~~None~~N/A

Table 962-10 Requirements for ~~Miscellaneous Structures~~Overhead Sign Structures					
Product	Standard	Grade	Type/ Style	Reportable Properties	Supplementary Requirements
				Type, Killed	
	A595	A, B	Any	Composition, Tensile, Type, Killed	~~None~~N/A

962-10 Miscellaneous Metal Items.

962-10.1 General: Unless otherwise specified in the contract documents, provide miscellaneous metal components in accordance with this section and Table 962-11, Table 962-12, Table 962-13, or Table 962-14. Structural tubing subject to tensile stresses, as defined in Section 460, shall meet Table 962-2.2 for tension components, Zone 1. Welding shall be done in accordance with the most current AWS D1.1 structural welding code. When galvanizing is specified in the contract documents, provide galvanizing in accordance with the contract documents.

Requirements for concrete reinforcement are contained in Section 931.

Requirements for steel guardrail are contained in Section 967.

Table 962-11 Requirements for Miscellaneous Metals				
Product	Standard	Grade	Type/ Style	Reportable Properties
Steel Sheet Piling	A328	All	Cold Rolled, Heat Treated	Composition, Tensile, Killed
	A572	42, 50, 55, 60, 65	1, 2, 3, 5	Composition, Tensile, Size, Killed
	A690	All	All	Composition, Tensile, Killed
Steel Pipe Piling	A252	3	All	Composition, Tensile, Size
	API 5L	X46, X52, X56, X60, X65, X70	PSL1	Tensile
			PSL2	Killed, Fine Grain, Tensile
Structural Tubing	A500	Round	B, C	Composition, Tensile, Flattening Test, Impact (Zone 1), Size
		Shaped		Composition, Tensile, Impact (Zone 1), Size
	A501	Square, Round, Rectangular, Special	A, B	Composition, Tensile, Impact (Zone 1), Size
	A847	Round	Welded, Seamless	Composition, Tensile, Flattening, Impact (Zone 1), Size
		Square, Rectangle, Special	Welded, Seamless	Composition, Tensile, Impact (Zone 1), Size

Table 962-11 Requirements for Miscellaneous Metals				
Product	Standard	Grade	Type/ Style	Reportable Properties
Pipe Railing	A53	A, B	E, S	Composition, Mechanical Testing (Tensile, Bend, Flattening), Size

962-10.2 Field Splice Filler Materials: Provide field splice filler materials in accordance with the contract documents. If unspecified and less than 3/16 inches thick filler splice materials in accordance with this section and Table 962-12. Filler plates may also meet the appropriate grades specified in 962-2. When galvanized plate is specified, galvanize material in accordance with 962-11

Table 962-12 Requirements for Field Splice Filler Materials				
Product	Standard	Grade	Type/ Style	Reportable Properties
Filler Sheet	A1011	50	HSLAS, Class 1	Designation, Grade

962-10.3 Fencing Material: Provide fencing materials in accordance with this Section and Table 962-13. When galvanizing is specified, provide galvanizing in accordance with the contract documents.

Table 962-13 Material Requirements for Fencing				
Product	Standard	Grade / Type	Style	Reportable Properties
Fabric	A116	60	No. 9	Breaking Strength, Coating Weight
		175	No. 12-1/2	
	A584	175	No. 12-1/2	
	M181	1, 2, 4	No. 9	
	A392	All	No. 9	
	A491	All	No. 9	
	F668	All	No. 9	
Posts	A702	50	Carbon, Rail	Tensile or Hardness
Pipe, Tube	A53	A, B	E, F, S	Grade, Finish
	F1083	Schedule 40	High Strength	Schedule
	F1043	1C	All	Group, Coating, Type
		1A	High strength	
Beam	A36	36	All Shapes	Grade, Killed
	A572	42		
	A992	50		

Table 962-13 Material Requirements for Fencing				
Product	Standard	Grade / Type	Style	Reportable Properties
Sheets	A1011	36, 45, 50	HSLAS, HSLAS-F, SS	Designation, Style

962-10.4 Steel Grates: Provide steel grating in accordance with this section and Table 962-14. When vaned gratings are specified, AASHTO HL-93 load testing may be substituted for tensile testing when specified in the contract documents. When Alternate G is specified, provide galvanizing in accordance with 962-11.1.

Table 962-14 Requirements for Steel Grating				
Product	Standard	Grade	Type/ Style	Reportable Properties
Steel Grating	A242	50	1	Composition, Tensile*, Killed
	A572		1, 2, 3, 5	Composition, Tensile*, Size, Killed
	A588		A, B, K	Composition, Tensile*, Fine Grain
	A1011	Any	SS, HSLAS, HSLAS-F	Designation, Style
* AASHTO HL-93 may be substituted for tensile testing for vaned gratings when specified.				

962-11 Galvanizing.

962-11.1 Plates, Structural Shapes, Bars, and Strip: When galvanizing is specified in the Contract Documents for ferrous metal products, provide galvanizing in accordance with the requirements of ASTM A123 or AASHTO M111. Zinc composition shall meet "Intermediate Grade" in accordance with ASTM B6 and Table 962-15.

Table 962-15 Requirements for Galvanizing Bath Composition			
Product	Zinc (Zn)	Lead (Pb)	Tin (Sn)
Galvanizing Bath	≥ 99.00%	≤ 0.50%	≤ 0.10%

962-11.2 Castings: When Alternative G castings are specified in the contract documents, provide galvanizing in accordance with the requirements of ASTM A123 or AASHTO M111. Zinc composition shall meet 962-11.1.

962-11.3 Fasteners and Hardware:

962-11.3.1 Fasteners and Hardware Designated Not High-Strength: When zinc coating is required in the contract documents provide galvanizing of steel or malleable iron in accordance with the requirements of ASTM A153 or ASTM A1059 Coating Class 25 to 35.

962-11.3.2 Fasteners and Hardware Designated as High-Strength: When zinc coating is required in the Contract Documents, provide galvanizing in accordance with

Table 962-16. ~~Coating of ASTM F3125, A490 bolts is prohibited.~~ Bake all hot dipped or electroplated bolt, rod, or bar with a tensile strength greater than or equal to 150 ksi to remove any residual hydrogen.

Table 962-16 Coating Requirements for Fastener and Hardware Designated as High-Strength				
Product	ASTM	Grade	Type/Style	Coating Finish
Bolts	F3125	A325	1	ASTM B695, Class 55 ASTM F2329 (not allowed for bridges) ~~Do Not Galvanize~~
	A354	BC~~A490~~	Heavy Hex~~All~~	
	A324	BC	Any	
Anchor Rods ~~Anchor Rods~~	~~F3125~~	~~A325~~	~~1~~	~~ASTM B633 SC 3, Type II~~
		~~A490~~	~~All~~	~~Do Not Galvanize~~
	F1554	105	All	ASTM B633 SC 3, Type II
	F1554	36, 55	All	ASTM B695 Class 55 ASTM F2329
Nuts	A563	~~A, C, D, C3,~~ DH~~,~~ ~~DH3~~	~~Hex,~~ Heavy Hex	ASTM B695 Class 55 ASTM F2329 (not allowed for bridges)
	A194	2H~~1, 2~~	~~All~~Heavy Hex	
Washers	F436	Circular, Beveled, Clipped, Extra Thick	1	ASTM B695 Class 55 ASTM F2329 (not allowed for bridges)
	F844	Round, Miscellaneous	~~A~~Plain	
DTI Devices	F959	A325	1	ASTM B695 Class 55

962-12 Certifications and Verification.

962-12.1 General: Provide certifications for steel directly from the Mill. Mill certifications shall show compliance with~~to~~ the specification and include the reportable properties and supplementary requirements from the applicable sections listed above.

When secondary processing, or testing has occurred~~, in addition to the mill certificate,~~ provide a certified mill analysis signed by a quality control representative that show compliance ~~with and the test results~~ and compliance with ~~of~~ the applicable sections listed above.

When material meeting "Buy America" is specified, the mill certification or certified mill analysis shall identify that the included material meets the Source of Supply-Steel requirements in Section 6.